

5

Global industrial chain restructuring and China's choice¹

Qiyuan Xu

The Chinese economy has embarked on a new development phase. While the nation has achieved decisive success in becoming a moderately prosperous society, its development environment is confronting profound and complex changes. In this context, China's industries face two major challenges: industrial chain upgrading and industrial chain security.

Industrial chain upgrading must meet the requirements of China's present phase of development, while digital technology and the green economy provide it with roadmaps to the future. Industrial chain security is related more to the ongoing China-US trade conflict and Covid-19 pandemic-related shocks. To be sure, the logic of the two intersect to a certain degree. In the context of external environmental changes, for example, the China-US conflict has not only caused China to prioritise industrial chain security; it has also made the promotion of industrial chain upgrading even more pressing. Driven by external pressures, China is stressing the need for industrial chain upgrading, even as the issue of security remains the fundamental starting point.

In the absence of Sino-US conflict, the impacts on global supply chains of the pandemic, the digital technology revolution and development of the green economy would have been more neutral and would have largely resulted in conventional survival-of-the-fittest competition between traditional and emerging sectors. But against the background of the trade conflict, the disrupting effects of digital

¹ This article was financed by a 2020 research proposal from Finance 40 Forum. This research was undertaken by Xu Qiyuan and Dong Yan. Key members of the research team also included: Zhao Hai, Su Qingyi, Cui Xiaomin, Yao Xi, Yang Panpan, Ma Yingying, Xiong Wan Ting, Dong Weijia, Chen Sichong, Lang Ping, Pan Yuanyuan and Hou Lei.

technology and digital globalisation have led to a deterioration in trust between the two countries. Meanwhile, tackling climate change has become one of the few consensus issues shared by China and the United States, making it more meaningful to the global economy.

In this sense, we regard the China–US conflict as the primary logic behind these dynamics, with the impacts of the pandemic, digital technology and the green economy as three sub-logics. Based on this assumption, this chapter presents seven key conclusions.

In the context of globalisation in the digital age, the China–US conflict is uniquely complex

The existing literature has generally highlighted the fact that the China–US conflict is underpinned by both ideological and ‘Thucydides Trap’-like challenges (Allison 2015; Xiao and Xu 2019). Meanwhile, the development of digital technology has blurred the boundaries of dual-use technology (technology used for military and civilian purposes) to such an extent that the China–US conflict has taken on a unique degree of complexity compared with similar historical cases.

Traditional trade and production integration has evolved in the digital age, as globalisation has generated cross-border flows of information in addition to the traditional flows of commodity sales and capital. Massive cross-border flows of information have implications for national security, particularly in relation to dual-use technologies, while the mechanisms of global governance still remain in the age of pre-digital-globalisation.

The encounters and conflicts playing out in the digital sector between China and the United States were never a factor in US–Russia, US–Japan and other conflicts in the past.

Information technology has fostered integration but has ironically led to declining trust between the two countries. This, coupled with the build-up of other complicating factors, such as conflicting ideologies and the Thucydides Trap, have conspired to make China–US relations more complex and vulnerable (Xu and Zhao, 2020). Indeed, it has even relegated trade and investment conflicts to secondary importance. Conflicts in the information sector directly impinging on matters of national security and international competition for top-level technological primacy will become increasingly prominent and difficult to solve. In turn, these could further exacerbate existing contradictions and conflicts in the traditional realms of trade and investment. Both sides should therefore attempt to face conflicts in this sector with greater wisdom and patience.

Three trends in global industrial chain restructuring: Diversification, digitisation and low carbon

Covid-19 has affected the industrial supply chains of different countries to varying degrees and global supply chains have been confronted by enormous uncertainty. In response, multinational corporations (MNCs) have begun to reassess their supply chain management practices—which were formerly concerned primarily with efficiency—turning to consider ways to better balance efficiency and security. Even governments in major nations such as the United States and Japan have begun to reflect on their industrial supply chain policies, emphasising the importance of autonomy and control, with social cost as the ultimate benchmark for industrial configuration. Adjustments have been made to the structure of the supply chains for medicines, computer chips and other key industries, and the establishment of domestic emergency backup supply chains, the repatriation of key industries, a return to regionalisation as well as the shortening of supply chains.

The pandemic will eventually pass but the world will have changed forever. The impact of Covid-19 on political and economic rationales has affected the reconstruction trends of global industrial supply chains. We believe three characteristics will emerge in the development of future global industrial chains.

First, MNCs will enhance industrial supply chain risk-mitigation capabilities by diversifying production (Ma and Cui 2021), which could result in some degree of industrial relocation for China but this differs from simple industry outside moving. In this context, the degree to which China can improve its business environment, ensure the stability and predictability of its supply chains and provide confidence and assurance to global downstream manufacturers will affect its future status in global supply chains.

Second, as the global landscape of factor endowments changes, global industrial supply chains will present knowledge-based, digitisation and capitalisation trends. In this process, the comparative advantage of the global division of labour will be redefined. Although some countries may enjoy a comparative labour cost advantage, many are relative laggards in developing their digital economies and there are bottlenecks in relevant infrastructure. In contrast, China possesses certain advantages and faces certain concerns in the process of industrial chain digitisation and capitalisation.

In terms of advantages, China has a huge market size and relatively fast development of digital infrastructure, which provides conditions for the popularisation and application of digital technology. In addition, compared with the industrial hollowing out in some developed countries, China has a strong manufacturing

capacity and a complete supporting network, which also provides a good foundation for the application of digital technology in manufacturing. However, the digital development of China's industrial chain also faces challenges. The rules of governance for cyber security are not yet uniform across countries, China's cyber governance still needs to be improved urgently and adjusted to the new situations, and there are still value conflicts between China and some other countries in this field.

Last, modes of production will become green and low-carbon. This could significantly influence developing countries that are either heavily dependent on energy exports or in the process of industrialisation. Tackling climate change has added constraints on the growth potential of developing economies and, in the context of the trend towards low carbon, carbon tariffs will make an export-oriented development model more difficult to replicate. In March 2019, the European Parliament passed the Carbon Border Adjustment Mechanism. In comparison, in 2008, the US Congress had tried to promote the *Lieberman–Warner Climate Security Act*, which was also related to carbon tariffs. In both cases, exemptions to tariffs were intended to apply only to a few small economies. Such limited exemptions leave larger economies still in the process of industrialisation—such as India, Vietnam and others heavily dependent on high-carbon resource exports—facing substantial challenges for future development. Compared with these developing countries, China has already completed its extensive growth phase and has entered a development phase characterised by intensive growth. In recent years, the embodied carbon emissions of China's exports have started to decline, while its green technology, green industry and green financial markets have all developed rapidly. This will facilitate China's ability to deal with future 'green shocks'.

The current trends towards digitisation and low carbon could become digital and green divides, separating developed and developing countries, with the latter increasingly struggling to catch up with their developed counterparts. For China, such a landscape presents both challenges and opportunities.

China's industrial chains are both globally influential and vulnerable

With reference to Korniyenko et al. (2017), our research shows that China has an advantage in more than 80 per cent of high-centrality export goods, meaning China's supply chains show strong tenacity. According to the UN Industrial Development Organization's industrial classification, China is the only country in the world with industries in the large, medium and small sectors. From 2017 to 2018, global trade included 3,556 intermediate goods according to HS 6-digits level of UN Comtrade database, with China ranked among the top-three export nations globally for 2,247 of these goods by volume. Meanwhile, China exports 858

high-centrality goods (second only to the United States in terms of volume), and it ranked at least third in the world for 693 (of 858) intermediate goods in terms of the size of exports (ranking first in 444 of them in 2017 and 2018).² This suggests China possesses a significant export advantage in high-centrality intermediate goods. It also speaks to the significant impact felt by global supply chains during the period before and after February 2020, when China was striving to control the spread of Covid-19, sparking concern around the world. A report released by the United Nations in March 2020 indicated that approximately 20 per cent of global trade of manufactured intermediate goods came from China. If China's intermediate goods exports were to decline by 2 percentage points, the exports of 45 major economies would decrease by approximately US\$46 billion, with Europe, the United States, Japan, South Korea and Taiwan (China) most heavily affected.

China has no advantage in 20 per cent of high-centrality export goods. Many of its exports also present 'large import and large export' characteristics, implying that a large quantity of intermediate goods is required during the production process. According to the product-level composite vulnerability index designed by our research team, electrical machinery and audio and video equipment (HS-2:85), mechanical equipment (HS-2:84) and optical medical instruments (HS-2:90) are the three industries with the most vulnerable supply chains in China. In particular, the composite vulnerability index ranking of electrical machinery and audio and video equipment (HS-2:85) is more than three times that of the last two industries; therefore, China needs to pay particular attention to this industry's supply chain security. We have built a system of indices and then classified all 3,285 intermediate goods (according to HS 6-digits level) imported into China in 2017 into four categories based on industrial supply chain vulnerability (Cui et al. 2021).

Category 1 comprises 62 intermediate goods out of 3,285 for which both global export centrality³ and China's import concentration are high. This category is the most vulnerable to external shocks like the US–China trade war and the global pandemic and is the most challenging for which to implement backup supply chains. Given these risks, this category should be given special assessment and priority. Industrial supply chain security plans should be formulated at the national and industry levels for those goods that possess national security and national development strategy implications.

Category 2 comprises 812 goods for which China's import concentration is lower and supply chain vulnerability is smaller than those in the first category. However, the global export centrality of these products is also higher, hence the potential

2 To control the impact the China–US trade war could have on existing trade network relationships, we have designated goods with export centrality in the top 25 per cent between 2017 and 2018 as high-centrality goods.

3 If an intermediate good shows a high global export centrality, it means less countries accounted for a large exports of this goods in the global market.

for future deterioration. China's import concentration is low for this category of goods, imports could easily be diversified and the current volume of imports is typically quite small. However, if the import volume for such goods was to rise significantly over the medium to long term, market concentration would increase and converge with global export centrality. Under such circumstances, goods in this category could be reclassified into Category 1 with the highest vulnerability. For this category of goods, a long-term view should be adopted and industrial supply chain security planning enhanced.

Category 3 comprises 759 goods that display higher import concentration, but lower global export centrality. Further diversification of import sources could be feasible for this category—specifically, the import concentration index of 39.8 per cent for China's high-vulnerability import goods is relatively high, but their global export centrality index is quite low, with electrical machinery and audio and video equipment (HS-2:85), mechanical equipment (HS-2:84) and optical medical instruments (HS-2:90) the usual suspects. China has some room to enhance supply chain diversification for these goods, hence industrial supply chain security remains relatively high for this category.

Category 4 comprises 1,652 intermediate goods with both low global export centrality and low import concentration. The supply chains for this category are the least vulnerable and their positions remain quite stable. The goods in this category represent more than 50 per cent of all imports in the intermediate goods categories and 48.2 per cent of import value.

The paradox of national industrial supply chains and the art of balance

From an industry-level perspective and based on individual country case studies, our research reveals that a paradox exists in industrial supply chains: a country cannot have both global influence and competitiveness in a particular industrial supply chain while simultaneously possessing complete autonomy and control over such a chain.

Our analysis of individual case studies for nine major economies has provided strong evidence of this paradox. Developed economies like the United States, Japan, Germany and other major European nations are established industrial superpowers close to the cutting edge of technological innovation. At the same time, they are also heavily dependent on imported goods and global production networks. We analysed individual countries with the same methodology as the aforementioned China's case, with our research indicating that the more internationally competitive a country's industries were, the more dependent they became on imported intermediate goods trade and the greater was their vulnerability to disruptions in global supply chains.

Take, for example, Japan, South Korea and the United States—countries with strong semiconductor industries, but whose electrical machinery and audio and video equipment (HS-2:85) are also the most heavily reliant on imports. Meanwhile, the mechanical equipment (HS-2:84) of Germany, the United Kingdom, France and Italy are globally competitive, yet their machinery equipment industries also top the rankings in terms of vulnerability. France, for example, is home to Airbus production, but aircraft, spacecraft and their parts and components (HS-2:88) are ranked as the country's third most vulnerable sector to supply chain disruption.

Next, we analysed China's manufacturing data by industry and showed that the industrial supply chain paradox is present in its technologically intensive industries but not in its labour-intensive industries (Yao et al. 2021). In this empirical research, we constructed a set of external reliance indicators for China's manufacturing sector by industry and used UIBE GVC indicators to depict the global position of a particular industry (competitiveness). When controlling for the impact of other variables, we were able to show that for technologically intensive industries, as the position of a particular industry rose in the global value chain, the level of that industry's external reliance also showed a rising trend. It is worth noting that this paradox was found only in technology-intensive industries and not in labour-intensive industries. This could be because supply chains for labour-intensive industries are shorter and circulation within a country can be more readily achieved.

Last, China can learn from the way the United States has achieved a more efficient balance in the face of the industrial supply chain paradox. Our research suggests it managed to achieve security assurances for its industrial supply chains through its political relationships and international alliances. If economic factors were the only consideration, China's global supply chain risk would be lower than that of the United States; however, after taking political relationships and supply interruption capabilities into consideration, China's global supply chain risk rises significantly while risk to the United States remains unchanged. Compared with the United States, China's global supply chain risk is more susceptible to political factors. Based on the US case study, under certain conditions, industrial supply chain security and competitiveness can be obtained. Therefore China, while increasing its industrial supply chain security, must also create positive political relationships with major nations to secure the competitiveness and efficiency of its industries (Su 2021).

China–US tariff exclusion rates could be raised to promote a decrease in bilateral tariffs

During the Trump administration, the United States imposed US\$370 billion worth of tariffs on Chinese exports. Given current domestic political conditions, the Biden administration is not in a position to abolish these tariffs. First, since

taking office, the Biden administration has issued executive orders to strengthen the *Buy American Act*, and in June 2021, President Joe Biden released his 100-day review of supply chain risks tied to semiconductors, electric vehicle (EV) batteries, rare earths and pharmaceuticals (including active pharmaceutical ingredients). This indicates that the administration's chief international economic policy consideration is to maintain a technological generation gap with China and ensure supply chain security. At a Senate confirmation hearing, the US Trade Representative (USTR), Katherine Tai, expressly stated that the United States was not ready to lift tariffs on China. Second, strong protectionist political demands exist within the United States. Indeed, in a political environment that regards China as a strategic competitor, the two US political parties have reached a consensus that a display of any policy weakness towards China would be pernicious. The relationship between China and the United States has, to some extent, fallen victim to partisan politics. Third, tactically, it is in the Biden administration's interest to save these tariffs for use as potential bargaining chips in its trade negotiations with China. Even free trade advocates within the United States such as former Treasury secretary Hank Paulson and the Business Roundtable who advocate for the cutting of tariffs on China nonetheless believe any such cuts should be used to gain concessions in new rounds of trade negotiations. Katherine Tai has hinted that she supports the above China trade strategy.

Against this backdrop, the possibility of both China and the United States increasing tariff exclusion rates is feasible and realistic.

First, a policy of wideranging tariffs is not the Biden administration's first choice. On coming to power, its first goal was to maintain the technological gap in the United States' favour and ensure supply chain security. It has therefore pursued a 'small yard, high fence' policy on a limited range of trade goods, the more targeted scope of which is meant to limit the negative impact of the tariffs. The administration seems to endorse the assumption that more wideranging tariff measures would entail larger welfare losses for both sides. Nonetheless, tariffs are unlikely to be lifted in the short term. During his election campaign, Joe Biden expressly opposed resolving the China-US trade war by increasing tariffs, but he retracted his statement under political pressure. Various policy orientations since Biden took office suggest that tariff measures are not the policy thrust of the US Government.

Second, the tariff exclusion measures face less internal political pressure. The government has repeatedly stressed it has no intention of 'decoupling' completely from China or engaging in a 'New Cold War'. Meanwhile, the US Government has mentioned explicitly that it will maintain cooperation with China in specific areas against the background of competition with China, and prompt China to play by Western international rules. Under domestic political pressure, however, the

US Government has failed to achieve a breakthrough. Nonetheless, tariff exclusion measures have already been implemented by the USTR and increasing the intensity of these measures could prove less challenging.

Finally, there is enormous room for the United States to increase tariff exclusion rates for China. To date, it imposes tariffs on US\$370 billion worth of Chinese exports to the United States, retaining an additional 25 per cent tariff on List 1 (US\$34 billion), List 2 (US\$16 billion) and List 3 (US\$200 billion) goods and an additional 7.5 per cent tariff on List 4 (US\$120 billion) goods. Compared with Lists 1 and 2, the exclusion rates for Lists 3 and 4 have fallen significantly (Yao et al. 2020). In the exclusion applications for Lists 1, 2, 3 and 4A, the shares of approved applications are 33.8 per cent, 37.4 per cent, 4.9 per cent and 6.5 per cent, respectively. This is because the goods in Lists 1 and 2, such as automobiles and their parts and instruments, have relatively complicated production technologies and longer supply chains, making it difficult to locate short-term substitutes, so they are therefore being given priority consideration under the USTR exclusion criteria. The goods in Lists 3 and 4—such as leather products, clothing and shoes—have relatively simple production technologies and shorter supply chains. Although their reliance on China is higher in terms of import value and poses greater potential damage to US consumer welfare (Amiti et al. 2020), finding short-term substitutes is relatively easy; hence, their exclusion rates are lower. Over the medium to long term, therefore, the United States will find it easier to expand the scope of exclusions for Lists 3 and 4A.

Finally, the recent sharp rise in inflationary pressures in the US economy puts the Federal Reserve in a dilemma. US consumer price index inflation was 9.1 per cent in June 2022 and 8.5 per cent in July. In the first two quarters of 2022, the US economy has entered into a technical recession, which is defined as two consecutive quarters of GDP contraction. Whether the US economy will face the risk of a real recession is still a controversial issue, but inflation is a real pressure for authorities. In addition, a high government debt burden makes it more difficult for the United States to abandon its current loose monetary policy. Given these factors, the Federal Reserve faces a significant dilemma given the inflationary pressures.

A significant increase in the tariff exclusion rate can suppress domestic inflation, this is something the United States should consider. In fact, at their bilateral summit held on 15 June 2021, the United States and the European Union committed to ending the trade war and eliminating tariffs related to the steel and aluminium trade by the end of that year. The bilateral trade involved, however, was worth only US\$18 billion—far less than the total in all ongoing trade conflicts between China and the United States, thereby doing little to ease inflationary pressures.

Understanding new trends in China–US technological competition

Adopting a patent-orientated perspective, we conducted a comprehensive evaluation of China's position in global technological competition. By studying Patent Cooperation Treaty (PCT) data from the past two decades, we found four primary characteristics that distinguish China's international patents: 1) they are enormous in quantity especially in recent years, 2) there is a rather low share of core patents, 3) they have shown rapid improvements in the past five years, and 4) they show significant bias towards particular sectors, concentrated in digital communications. A comparison of PCT core patents by industry between China and the United States shows that a significant gap still exists between China and the United States and Japan. This indicates that the United States has overestimated China's technological competitiveness and has taken too many unnecessary measures to contain it. Meanwhile, China should try to view this gap objectively and seek a way to balance the relationship between independent innovation and international technological collaboration, ensuring its active participation in global technological governance.

New drivers of China–US technological competition can be attributed to two factors: the rapid development of new digital technologies and the different philosophy adopted by the Biden administration compared with that under Trump. In the digital space, the United States already regards China as its biggest competitor, and this strategic competition will continue, regardless of which administration is in power. In this regard, the Biden and Trump administrations are in basic agreement.

Nonetheless, the Biden administration differs significantly from its predecessor in its approach to containing China technologically. Specifically, the new administration is more concerned about the negative impact of implementing technology curbs and will likely adjust the Trump-era policies, particularly those that resulted in a lose-lose situation for both countries.

A review of the technology curbs implemented against China during the Trump era shows three areas of negative impact on the United States: first, the excessive controls imposed on China hurt the business interests of US high-tech companies, thereby affecting their R&D investment. Second, excessively rigorous restrictions on US personnel exchanges with China also damaged R&D human capital in specific high-tech sectors in the United States. Third, the United States' position as the centre of international technological collaboration has weakened. US–China technology partnerships have decreased since the inception of the trade war in 2018, but those between China and Europe and China and Japan have increased, partially filling the void left by this downturn. During the Twelfth Five-Year Plan period, the share of China's joint patent applications with Germany, the United Kingdom,

France and Japan was 23.7 per cent—just half that of China–US collaboration. This rose to 38.3 per cent in 2018—equivalent to that of China–US collaboration (Dong and Yao 2021).

Based on these impacts, the Biden administration is focused on how policies on China have negatively affected US technological competitiveness. Hence, the following three areas are expected to feature in its policy framework: 1) an increase in its own R&D investment; 2) targeted curbs based on ‘small yard, high fence’ characteristics; and 3) leverage alliances and multilateral platforms to create ‘alliance groups’ targeted at key technology sectors to narrow China’s room for diplomatic manoeuvring.

Our forecasts for new trends in China–US technological competition in the Biden era are as follows. First, their technological competition and rivalry in cyberspace will intensify, with an increase in the possibility of parallel systems emerging. As a core area of competition among superpowers, national security has become an extremely generalised concept in geopolitical rivalry. Supply chain and data security have become the current focus of superpower competition. Rising competitiveness has sharply reduced the willingness of nations to collaborate, lowering the effectiveness of multilateral governance mechanisms, and the United States’ tough anti-China stance could increase the possibility of the emergence of parallel systems (Lang 2021). However, as both countries remain deeply intertwined in global industrial supply chains, this could be delayed to a large extent.

Our research shows that while the United States has imposed export-control policies on Huawei, the impacts of these sanctions have significantly rebounded on Huawei’s US suppliers. Moreover, the financial market’s reaction to sanctions against Huawei not only affects suppliers, but also creates a ripple effect throughout industrial supply chains. There was significant contagion effect among industries for at least three of the nine industries in which Huawei’s suppliers are involved, affecting 16 of 24 suppliers. The contagion effect could prompt industry associations to try to influence policymaking to counteract such reverse shocks. Meanwhile, the Semiconductor Industry Association of America actively participated to affect a response to the implementation of the policy sanctioning Huawei. Finally, affected US suppliers responded to the sanctions by speeding up their exports to Huawei before they took effect, moving related production lines overseas and putting pressure on the US Government (Chen and Liang 2021).

Second, China–US technological competition will enter an era of comprehensive national power competition based on a model of ‘all government and all society’. On the one hand, the information technology revolution has penetrated every aspect of the economy, society, politics and security, and all sectors need to adjust

to the new reality. On the other hand, the rise of internet enterprises has led to the sharing of some of the power once belonging to government. The development of both digital industries and cybersecurity requires the cooperation of all parties.

Third, the ongoing contest between China and the United States to shape international rules and discourse power will intensify. In the past two years, European, US and UN organisations have exchanged views about international rules and legal frameworks around cyberspace. New norms in this sector have continued to emerge, and the process of shaping a new system has reached a critical juncture. A contest for power over the universalisation of international norms pertaining to cyberspace will intensify.

China's industrial supply chains: Outward relocation, inward relocation or international regional reorganisation?

In spatial terms, China's industrial supply chains face three possible directions for adjustment: outward relocation, inward relocation and regional reorganisation. However, these are neutral narratives and their outcomes could depend on specific situations—in other words, each could bring favourable and unfavourable outcomes for China.

The unfavourable outcomes for each adjustment direction include the following:

1. Excessive outward relocation of industry could have a hollowing-out effect.
2. The inward relocation caused by excessive policy intervention could lead to a distorted and inefficient allocation of resources.
3. The 'friendly outsourcing' and direct investment backflow policies dominated by the US could lead to a contraction of global production networks towards North America. Other economies in Asia including China, meanwhile, could face more pressure to maintain their position in the global production networks.

More benign outcomes of these adjustments could include the following:

1. Desirable outward relocation of industry is a natural outcome of domestic industrial upgrading and could help to create an international division of labour that is favourable to China, thereby expanding the international influence of its industrial chains.
2. Leveraging the comparative advantages of central and western China, which are less developed compared with the east, and relocating industrial supply chains further inland would improve efficiency and attract more foreign investment.

3. Leveraging China's market and technological advantages to promote regional industrial supply chain consolidation would promote regional economic integration, thereby deepening the integration of the Chinese economy into the East Asian production networks.

In Vietnam, for example, we observed and researched the outward relocation of Chinese industry. It may surprise many to learn that Vietnam became China's third largest export destination in 2020. We sought to break down China's rapidly growing exports to Vietnam and have, to an extent, found answers to several questions about the composition and nature of China's industrial relocation to Vietnam (Yang et al. 2021). Our research reveals two major characteristics of China's exports to Vietnam: first, most are intermediate goods, which are not intended to meet Vietnamese end-user demand; and second, Chinese enterprises' direct investment in and relocation to Vietnam are the key factors underpinning the rise in intermediate goods exports to the country.

China's direct investment in and industrial relocation to Vietnam have fostered closer international production network relationships between the two countries. A portion of China's trade surplus with Europe and the United States has shifted to that with Vietnam and Vietnam's surplus with Europe and the United States. Pressure on China from an excessively concentrated balance of payments imbalance has eased. It is obvious therefore that trade relations between China and Vietnam are more like those that previously prevailed between Japan and China. China has become a key node in the global value chain and Vietnam has the potential to become a secondary node. But, as mentioned at the beginning of this chapter, trends in digitisation and low carbon will present more challenges for Vietnam in the long term.

We make the following recommendations for consolidating domestic industrial supply chains and effectively linking industry in eastern and western China:

1. Local government incentive and restriction mechanisms in central and western China should be improved, market standards and government efficiency enhanced, while working to improve government–enterprise relations.
2. Border provinces in central and western China should actively cooperate on labour with other countries such as Vietnam and Myanmar, both of which have advantages in low labour costs and abundant, young labour forces. Border provinces such as Guangxi and Yunnan should therefore plan to set up labour-intensive industries and enact an economic integration model comprising Chinese industrial supply chains and a Vietnamese or Burmese labour force. By providing language training, tertiary education and other initiatives, these provinces could attract young Vietnamese or Burmese labour to China to learn and work. This would help address China's shortage of young workers and import foreign labour so local industries can remain in China.

The impact on East Asian nations of Europe's pandemic-induced suspension of its automotive industry supply chain has been a revelation in terms of regional supply chain reorganisation: this industry could be suitable for collaboration for East Asia. The automotive industry chain is a typical model of globalised manufacturing. Europe's automotive industry ceased production in March and April 2020 because of Covid-19. China's imports of automotive parts and components faced supply interruptions, while Europe reduced its imports of automotive parts and components from Japan and South Korea. Against this backdrop, the possibility arose for Japanese and South Korean supply to be redirected to meet China's import demand. For Tier 2 and 3 suppliers, the automotive supply chains of Japan and South Korea could be an effective match with China's.

The highly integrated automotive industry serves as an appropriate means for East Asian industrial chain collaboration. In the context of the revolution in new technology and new energy, automotive manufacturing is closely connected to artificial intelligence (AI) and green energy, with East Asian nations such as China, Japan and South Korea each possessing their own advantages. China is one of the leaders in AI and self-driving vehicles, with a comprehensive industry support network and an enormous domestic market. It is therefore expected to play a pivotal role in automotive supply chain collaboration in East Asia. We also note, however, that economic collaboration in East Asia is, to a very large extent, subject to political relations within the region, and therefore faces challenges.

References

- Allison, Graham. 2015. 'The Thucydides Trap: Are the US and China Headed for War?' *The Atlantic*, 24 September.
- Amiti, Mary, Stephen J. Redding and David E. Weinstein. 2020. 'Who's Paying for the US Tariffs? A Longer-Term Perspective.' *AEA Papers and Proceedings* 110: 541–46. doi.org/10.1257/pandp.20201018.
- Chen, Sichong and Liang Qitian. 2021. *Sanctions on Huawei: The loss of US suppliers and its diffusion effect across industry*. Global Development Perspective Working Paper. Beijing: Institute of World Economy and Politics, Chinese Academy of Social Sciences.
- Cui, Xiaomin, Xiong Wanting, Yang Panpan and Xu Qiyuan. 2021. *China's industry security: Network analysis on products level*. China's External Economic Environment Working Paper. Beijing: Institute of World Economy and Politics, Chinese Academy of Social Sciences.
- Dong, Weijia and Yao Xi. 2021. *The impact of Sino-US conflict on the landscape of China's international technology cooperation*. Global Development Perspective Working Paper. Beijing: Institute of World Economy and Politics, Chinese Academy of Social Sciences.

- Korniyenko, Yevgeniya, Magali Pinat and Brian Dew. 2017. *Assessing the fragility of global trade: The impact of localized supply shocks using network analysis*. IMF Working Paper WP/17/30. Washington, DC: International Monetary Fund. doi.org/10.5089/9781475578515.001.
- Lang, Ping. 2021. 'How Has the Internet Changed International Relations?' [In Chinese]. *Quarterly Journal of International Politics* 2(June): 90–121.
- Ma, Yingying and Cui Xiaomin. 2021. 'Global Industry Chain's Development and Restructuring: The Trend and New Changes.' [In Chinese]. *Globalization* 2 (February): 102–13.
- Su, Qingyi. 2021. 'Analysis of Global Supply Chain: Security and Efficiency.' [In Chinese]. *Quarterly Journal of International Politics* 2 (February): 2–33.
- Xiao, He and Xu Qiyuan. 2019. 'China and US Relations: From the Perspective of International Order Interaction.' [In Chinese]. *The Chinese Journal of American Studies* 2 (February): 107–29.
- Xu, Qiyuan and Zhao Hai. 2020. *Understanding the logic of China–US conflict from the perspective of the three phases of globalization*. Global Development Perspective Policy Brief No. 20.001. Beijing: Institute of World Economy and Politics, Chinese Academy of Social Sciences.
- Yang, Panpan, Xu Qiyuan and Zhang Zixu. 2021. *Vietnam as the third largest export destination of China: Why and what it means*. Research Center of International Finance Working Paper. Beijing: Institute of World Economy and Politics, Chinese Academy of Social Sciences.
- Yao, Xi, Xu Qiyuan and Zhang Zixu. 2021. *China's external dependence of industry: An assessment based on WIOT*. Global Development Perspective Working Paper. Beijing: Institute of World Economy and Politics, Chinese Academy of Social Sciences.
- Yao, Xi, Zhao Hai and Xu Qiyuan. 2020. 'The Impacts on Global Industry Chain of US Tariff Exclusion.' *International Economic Review* 5 (October): 26–42.

This text is taken from *China's Transition to a New Phase of Development*, edited by Ligang Song and Yixiao Zhou, published 2022 by ANU Press, The Australian National University, Canberra, Australia.

doi.org/10.22459/CTNPD.2022.05